

POWERED BY **Dialog****Dialog eLink:** [Order File History](#)**Channel structure for communications system****Patent Assignee:** JOU Y; REZAIIFAR R; TIEDEMANN E G; QUALCOMM INC**Inventors:** JOU Y; JOU Y C; REZAIIFAR R; REZAIIFAR R; TIEDEMANN D G; TIEDEMANN E; TIEDEMANN E G; TIEDEMANN G; TIEDEMAN E G**Patent Family (36 patents, 83 countries)**

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 1999014975	A2	19990325	WO 1998US19334	A	19980916	199921	B
ZA 199808432	A	19990526	ZA 19988432	A	19980915	199927	E
AU 199894889	A	19990405	AU 199894889	A	19980916	199933	E
NO 200001334	A	20000510	WO 1998US19334	A	19980916	200034	E
			NO 20001334	A	20000315		
EP 1016303	A2	20000705	EP 1998948285	A	19980916	200035	E
			WO 1998US19334	A	19980916		
BR 199812317	A	20000829	BR 199812317	A	19980916	200046	E
			WO 1998US19334	A	19980916		
US 6167270	A	20001226	US 1997931535	A	19970916	200103	E
			US 2000503871	A	20000214		
CN 1291412	A	20010411	CN 1998809087	A	19980916	200140	E
KR 2001024009	A	20010326	KR 2000702738	A	20000315	200161	E
US 20010036831	A1	20011101	US 1997931535	A	19970916	200168	E
			US 2000503869	A	20000214		
			US 2001870604	A	20010530		
JP 2001517049	W	20011002	WO 1998US19334	A	19980916	200172	E
			JP 2000512378	A	19980916		
TW 437249	A	20010528	TW 1999115444	A	19990211	200172	E
US 6377809	B1	20020423	US 1997931535	A	19970916	200232	E
MX 2000002632	A1	20011001	MX 20002632	A	20000315	200274	E
US 20030002464	A1	20030102	US 1997931535	A	19970916	200305	E
			US 2000504242	A	20000215		
US 6526030	B2	20030225	US 1997931535	A	19970916	200323	E
			US 2000504242	A	20000215		
AU 758322	B	20030320	AU 199894889	A	19980916	200329	E
AU 2003200077	A1	20030417	AU 199894889	A	19980916	200433	NCE

			AU 2003200077	A	20030110		
RU 2233037	C2	20040720	WO 1998US19334	A	19980916	200455	E
			RU 2000109590	A	19980916		
MX 219936	B	20040416	WO 1998US19334	A	19980916	200477	E
			MX 20002632	A	20000315		
EP 1016303	B1	20051214	EP 1998948285	A	19980916	200602	E
			WO 1998US19334	A	19980916		
DE 69832805	E	20060119	DE 69832805	A	19980916	200614	E
			EP 1998948285	A	19980916		
			WO 1998US19334	A	19980916		
EP 1641147	A1	20060329	EP 1998948285	A	19980916	200623	E
			EP 200526669	A	19980916		
CN 1178545	C	20041201	CN 1998809087	A	19980916	200625	E
DE 69832805	T2	20060810	DE 69832805	A	19980916	200654	E
			EP 1998948285	A	19980916		
			WO 1998US19334	A	19980916		
KR 2006114392	A	20061106	WO 1998US19334	A	19980916	200734	E
			KR 2006721579	A	20061018		
EP 1641147	B1	20080402	EP 1998948285	A	19980916	200825	E
			EP 200526669	A	19980916		
DE 69839328	E	20080515	DE 69839328	A	19980916	200833	E
			EP 200526669	A	19980916		
NO 325590	B1	20080623	WO 1998US19334	A	19980916	200844	E
			NO 20001334	A	20000315		
KR 685687	B1	20070223	WO 1998US19334	A	19980916	200850	E
			KR 2000702738	A	20000315		
KR 803956	B1	20080215	WO 1998US19334	A	19980916	200862	E
			KR 2000702738	A	20000315		
			KR 2006721579	A	20061018		
JP 4152584	B2	20080917	WO 1998US19334	A	19980916	200863	E
			JP 2000512378	A	19980916		
CA 2302942	C	20090203	CA 2302942	A	19980916	200912	E
			WO 1998US19334	A	19980916		
US 7519044	B1	20090414	US 1997931535	A	19970916	200926	E
			US 2000503401	A	20000214		
DE 69839328	T2	20090514	DE 69839328	A	19980916	200933	E
			EP 200526669	A	19980916		
RU 2335851	C2	20081010	RU 2000109590	A	19980916	200934	E

RU 2004100940	A	20040109
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**Priority Application Number (Number Kind Date):** US 1997931535 A 19970916; US 2000503869 A 20000214; US 2000503871 A 20000214; US 2000503401 A 20000214; US 2000504242 A 20000215; US 2001870604 A 20010530; AU 2003200077 A 20030110

### Patent Details

Patent Number	Kind	Language	Pages	Drawings	Filing Notes
WO 1999014975	A2	EN	48	9	
National Designated States,Original	AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH GM HR HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZW				
Regional Designated States,Original	AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG ZW				
ZA 199808432	A	EN	49		
AU 199894889	A	EN			Based on OPI patent WO 1999014975
NO 200001334	A	NO			PCT Application WO 1998US19334
EP 1016303	A2	EN			PCT Application WO 1998US19334
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Regional Designated States,Original	DE FI FR GB IT SE				
BR 199812317	A	PT			PCT Application WO 1998US19334
					Based on OPI patent WO 1999014975
US 6167270	A	EN			Division of application US

				1997931535
<u>US</u> <u>20010036831</u>	A1	EN		Division of application US 1997931535
				Division of application US 2000503869
JP 2001517049	W	JA	56	PCT Application WO 1998US19334
				Based on OPI patent WO 1999014975
TW 437249	A	ZH		
<u>US</u> <u>20030002464</u>	A1	EN		Division of application US 1997931535
				Division of patent US 6377809
<u>US 6526030</u>	B2	EN		Division of application US 1997931535
				Division of patent US 6377809
AU 758322	B	EN		Previously issued patent AU 9894889
				Based on OPI patent WO 1999014975
AU 2003200077	A1	EN		Division of application AU 199894889
RU 2233037	C2	RU		PCT Application WO 1998US19334
				Based on OPI patent WO 1999014975
MX 219936	B	ES		PCT Application

			WO 1998US19334
			Based on OPI patent WO 1999014975
<u>EP 1016303</u>	B1	EN	PCT Application WO 1998US19334
			Based on OPI patent WO 1999014975
Regional Designated States,Original	DE FI FR GB IT SE		
DE 69832805	E	DE	Application EP 1998948285
			PCT Application WO 1998US19334
			Based on OPI patent EP 1016303
			Based on OPI patent WO 1999014975
<u>EP 1641147</u>	A1	EN	Division of application EP 1998948285
			Division of patent EP 1016303
Regional Designated States,Original	AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI		
DE 69832805	T2	DE	Application EP 1998948285
			PCT Application WO 1998US19334
			Based on OPI patent EP 1016303

			Based on OPI patent WO 1999014975
KR 2006114392	A	KO	PCT Application WO 1998US19334
			Based on OPI patent WO 1999014975
<u>EP 1641147</u>	B1	EN	Division of application EP 1998948285
			Division of patent EP 1016303
Regional Designated States,Original	DE FI FR GB IT SE		
DE 69839328	E	DE	Application EP 200526669
			Based on OPI patent EP 1641147
NO 325590	B1	NO	PCT Application WO 1998US19334
			Previously issued patent NO 200001334
KR 685687	B1	KO	PCT Application WO 1998US19334
			Previously issued patent KR 2001024009
			Based on OPI patent WO 1999014975
KR 803956	B1	KO	PCT Application WO 1998US19334

				Division of application KR 2000702738
				Previously issued patent KR 2006114392
				Based on OPI patent WO 1999014975
JP 4152584	B2	JA	27	PCT Application WO 1998US19334
				Previously issued patent JP 2001517049
				Based on OPI patent WO 1999014975
CA 2302942	C	EN		PCT Application WO 1998US19334
				Based on OPI patent WO 1999014975
US 7519044	B1	EN		Division of application US 1997931535
				Division of patent US 6377809
DE 69839328	T2	DE		Application EP 200526669
				Based on OPI patent EP 1641147
RU 2335851	C2	RU		Division of application RU 2000109590

### Alerting Abstract: WO A2

NOVELTY - A channel structure includes two sets of physical channels, one for the forward link (50) and one for the reverse link (52) to facilitate communication of a variety of logic channels and the

physical channels comprise data and control channels. A base station (4) transmits high speed data to a remote station (6) and each base station maintains a data queue (40), while a channel element (42) encodes the data packet and control fields and inserts a set of code tail bits, to form a formatted packet which is scrambled, modulated and sent

**DESCRIPTION** - Independent claims are included for transmitting and receiving devices of a communications system

**USE** - Transmitting traffic data and voice data over forward and reverse links

**ADVANTAGE** - Optimum transmission of data and voice services

**DESCRIPTION OF DRAWINGS** - The drawing is a block diagram illustrating the basic subsystems of an exemplary communication system embodying the present invention.

50,52 Forward and reverse links

4 Base station

6 Remote station

40 Data queue

42 Channel element

**International Classification (Main):** C07H-021/04, H04B-007/26, H04Q, H04Q-007/38  
**(Additional/Secondary):** C12N-009/88, C12P-013/20

### International Patent Classification

IPC	Level	Value	Position	Status	Version
H04B-0007/02	A	I	F	B	20060101
H04B-0007/02	A	I	L		20060101
H04B-0007/185	A	N	L	R	20060101
H04B-0007/185	A	N		R	20060101
H04B-0007/185	A	I	L		20060101
H04B-0007/24	A	I	F	B	20060101
H04B-0007/24	A	I	L		20060101
H04B-0007/26	A	I	L		20060101
H04B-0007/26	A	I	L	B	20060101
H04B-0007/26	A	I	L	R	20060101
H04B-0007/26	A	I	F		20060101
H04B-0007/26	A	I		R	20060101
H04B-0007/26	A	I	F	B	20060101



H04J-0001/00	A	I	L	B	20060101
H04J-0013/00	A	I	L	B	20060101
H04J-0003/24	A	I	F	B	20060101
H04Q-0007/38	A	I	F		20060101
H04Q-0007/38	A	I	F	B	20060101
H04Q-0007/38	A	I	L		20060101
H04W-0036/18	A	N		R	20090101
H04W-0036/18	A	I	L		20090101
H04W-0048/12	A	N		R	20090101
H04W-0052/02	A	N		R	20090101
H04W-0052/02	A	I	F		20090101
H04W-0072/04	A	N		R	20090101
H04W-0076/04	A	I		R	20090101
H04B-0007/02	C	I		B	20060101
H04B-0007/02	C	I			20060101
H04B-0007/185	C	N	L	R	20060101
H04B-0007/185	C	N		R	20060101
H04B-0007/185	C	I			20060101
H04B-0007/24	C	I		B	20060101
H04B-0007/24	C	I			20060101
H04B-0007/26	C	I	L	B	20060101
H04B-0007/26	C	I	F	B	20060101
H04B-0007/26	C	I	L	R	20060101
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H04B-0007/26	C	I		R	20060101
H04B-0007/26	C	I		B	20060101
H04J-0001/00	C	I	L	B	20060101
H04J-0013/00	C	I	L	B	20060101
H04J-0003/24	C	I		B	20060101
H04Q-0007/38	C	I		B	20060101
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H04W-0036/00	C	N		R	20090101
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H04W-0052/00	C	I			20090101

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H04W-0076/00	C	I	R	20090101

**US Classification, Issued:** 370-336000, 370-349000, 455-442000, 455-455000

**US Classification, Issued:** 370-331000, 370-335000, 370-342000, 375-340000, 455-062000, 455-067110, 455-443000, 455-455000, 455-522000, 455-525000

**US Classification, Issued:** 455455, 455525, 455443, 375340, 370336, 455442, 455455, 455562, 370331, 455455, 455522, 45567.1, 370335, 370342, 370335, 370342, 455522, 370349

## Original Publication Data by Authority

### Australia

Publication Number: AU 2003200077 A1 (Update 200433 NCE)

Publication Date: 20030417

Assignee: QUALCOMM INC (QCOM)

Inventor: REZAIIFAR R JOU Y TIEDEMANN D G

Language: EN

Application: AU 199894889 A 19980916 (Division of application) AU 2003200077 A 20030110 (Local application)

Priority: AU 2003200077 A 20030110 (Local application)

Original IPC: C07H-21/04(A) C12N-9/88(B) C12P-13/20(B)

Current IPC: C07H-21/04(A) C12N-9/88(B) C12P-13/20(B) | AU 758322 B (Update 200329 E)

Publication Date: 20030320

Assignee: QUALCOMM INC; US (QCOM)

Language: EN

Application: AU 199894889 A 19980916 (Local application)

Priority: US 1997931535 A 19970916

Related Publication: AU 9894889 A (Previously issued patent) WO 1999014975 A (Based on OPI patent )

Original IPC: H04Q-7/38(A)

Current IPC: H04B-7/185(R,N,M,EP,20060101,20051008,A) H04B-7/185

(R,N,M,EP,20060101,20051008,C) H04B-7/26(R,I,M,EP,20060101,20051008,A) H04B-7/26

(R,I,M,EP,20060101,20051008,C) H04J-1/00(B,I,M,RU,20060101,20050627,A,L) H04J-1/00

(B,I,M,RU,20060101,20050627,C,L) H04J-13/00(B,I,M,RU,20060101,20040720,A,L) H04J-13/00

(B,I,M,RU,20060101,20040720,C,L) H04W-36/00(R,N,M,EP,20090101,20090105,C) H04W-36/18

(R,N,M,EP,20090101,20090105,A) H04W-52/00(R,N,M,EP,20090101,20090105,C) H04W-52/02

(R,N,M,EP,20090101,20090105,A)

Current ECLA class: H04B-7/26T10 H04Q-7/38C2 H04Q-7/38H

Current ECLA ICO class: T04B-7:185S8 T04Q-7:22S3 T04Q-7:32E4 T04Q-7:38C2 T04Q-7:38C8

T04Q-7:38H4 T04W-36:18 T04W-52:02 | AU 199894889 A (Update 199933 E)

Publication Date: 19990405

Assignee: QUALCOMM INC; US (QCOM)

Language: EN

Application: AU 199894889 A 19980916 (Local application)

Priority: US 1997931535 A 19970916

Related Publication: WO 1999014975 A (Based on OPI patent )

Original IPC: H04Q-7/38(A)

Current IPC: H04B-7/185(R,N,M,EP,20060101,20051008,A) H04B-7/185

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T04Q-7:38H4 T04W-36:18 T04W-52:02

**Brazil**

Publication Number: BR 199812317 A (Update 200046 E)  
Publication Date: 20000829  
Assignee: QUALCOMM INC (QCOM)  
Inventor: REZAIIFAR R  
Language: PT  
Application: BR 199812317 A 19980916 (Local application) WO 1998US19334 A 19980916 (PCT Application)  
Priority: US 1997931535 A 19970916  
Related Publication: WO 1999014975 A (Based on OPI patent )  
Original IPC: H04Q-7/38(A)  
Current IPC: H04B-7/185(R,A,N,M,EP,20060101,20051008,A) H04B-7/185  
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(B,I,M,RU,20060101,20040720,C,L) H04W-36/00(R,N,M,EP,20090101,20090105,C) H04W-36/18  
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T04Q-7:38H4 T04W-36:18 T04W-52:02

**Canada**

Publication Number: CA 2302942 C (Update 200912 E)  
Publication Date: 20090203  
Assignee: QUALCOMM INC (QCOM)  
Inventor: JOU Y REZAIIFAR R TIEDEMANN E G  
Language: EN  
Application: CA 2302942 A 19980916 (Local application) WO 1998US19334 A 19980916 (PCT Application)  
Priority: US 1997931535 A 19970916  
Related Publication: WO 1999014975 A (Based on OPI patent )  
Original IPC: H04B-7/185(I,CA,20060101,A,L) H04B-7/185(I,M,98,20060101,C) H04W-36/00  
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Current ECLA class: H04B-7/26T10 H04Q-7/38C2 H04Q-7/38H  
Current ECLA ICO class: T04B-7:185S8 T04Q-7:22S3 T04Q-7:32E4 T04Q-7:38C2 T04Q-7:38C8  
T04Q-7:38H4 T04W-36:18 T04W-52:02

**China**

Publication Number: CN 1178545 C (Update 200625 E)  
Publication Date: 20041201  
Assignee: QUALCOMM INC; US (QCOM)  
Inventor: REZAIIFAR R TIEDEMANN E G  
Language: ZH  
Application: CN 1998809087 A 19980916 (Local application)  
Priority: US 1997931535 A 19970916  
Original IPC: H04Q-7/38(A) H04B-7/26(B)  
Current IPC: H04B-7/185(R,A,N,M,EP,20060101,20051008,A) H04B-7/185  
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Current ECLA class: H04B-7/26T10 H04Q-7/38C2 H04Q-7/38H  
Current ECLA ICO class: T04B-7:185S8 T04Q-7:22S3 T04Q-7:32E4 T04Q-7:38C2 T04Q-7:38C8  
T04Q-7:38H4 T04W-36:18 T04W-52:02CN 1291412 A (Update 200140 E)  
Publication Date: 20010411  
Assignee: QUALCOMM INC; US (QCOM)  
Language: ZH  
Application: CN 1998809087 A 19980916 (Local application)  
Priority: US 1997931535 A 19970916  
Original IPC: H04Q-7/38(A) H04B-7/26(B)  
Current IPC: H04B-7/185(R,A,N,M,EP,20060101,20051008,A) H04B-7/185  
(R,N,M,EP,20060101,20051008,C) H04B-7/26(R,I,M,EP,20060101,20051008,A) H04B-7/26  
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(R,N,M,EP,20090101,20090105,A)  
Current ECLA class: H04B-7/26T10 H04Q-7/38C2 H04Q-7/38H  
Current ECLA ICO class: T04B-7:185S8 T04Q-7:22S3 T04Q-7:32E4 T04Q-7:38C2 T04Q-7:38C8  
T04Q-7:38H4 T04W-36:18 T04W-52:02

## Germany

Publication Number: DE 69832805 E (Update 200614 E)  
Publication Date: 20060119  
Assignee: QUALCOMM INC; US (QCOM)  
Inventor: REZAIIFAR R JOU Y TIEDEMANN G  
Language: DE  
Application: DE 69832805 A 19980916 (Local application) EP 1998948285 A 19980916 (Application)  
WO 1998US19334 A 19980916 (PCT Application)  
Priority: US 1997931535 A 19970916  
Related Publication: EP 1016303 A (Based on OPI patent ) WO 1999014975 A (Based on OPI patent )  
Original IPC: H04B-7/26(I,DE,20060101,A,L) H04Q-7/38(I,DE,20060101,A,F)  
Current IPC: H04B-7/26(I,DE,20060101,A,L) H04Q-7/38(I,DE,20060101,A,F)IDE 69832805 T2  
(Update 200654 E)  
Publication Date: 20060810  
Assignee: QUALCOMM INC; US (QCOM)  
Inventor: REZAIIFAR R JOU Y TIEDEMANN G

Language: DE

Application: DE 69832805 A 19980916 (Local application) EP 1998948285 A 19980916 (Application)  
WO 1998US19334 A 19980916 (PCT Application)

Priority: US 1997931535 A 19970916

Related Publication: EP 1016303 A (Based on OPI patent ) WO 1999014975 A (Based on OPI patent )

Original IPC: H04B-7/26(B,I,H,EP,20060101,20051017,A,L) H04Q-7/38  
(B,I,H,EP,20060101,20051017,A,F)

Current IPC: H04B-7/185(R,N,M,EP,20060101,20051008,A) H04B-7/185

(R,N,M,EP,20060101,20051008,C) H04B-7/26(B,I,H,EP,20060101,20051017,A,L) H04B-7/26

(B,I,H,EP,20060101,20051017,C,L) H04J-1/00(B,I,M,RU,20060101,20050627,A,L) H04J-1/00

(B,I,M,RU,20060101,20050627,C,L) H04J-13/00(B,I,M,RU,20060101,20040720,A,L) H04J-13/00

(B,I,M,RU,20060101,20040720,C,L) H04W-36/00(R,N,M,EP,20090101,20090105,C) H04W-36/18

(R,N,M,EP,20090101,20090105,A) H04W-52/00(R,N,M,EP,20090101,20090105,C) H04W-52/02

(R,N,M,EP,20090101,20090105,A)

Current ECLA class: H04B-7/26T10 H04Q-7/38C2 H04Q-7/38H

Current ECLA ICO class: T04B-7:185S8 T04Q-7:22S3 T04Q-7:32E4 T04Q-7:38C2 T04Q-7:38C8

T04Q-7:38H4 T04W-36:18 T04W-52:02|DE 69839328 E (Update 200833 E)

Publication Date: 20080515

Assignee: QUALCOMM INC; US (QCOM)

Inventor: REZAIIFAR R TIEDEMANN E G JOU Y

Language: DE

Application: DE 69839328 A 19980916 (Local application) EP 200526669 A 19980916 (Application)

Priority: US 1997931535 A 19970916

Related Publication: EP 1641147 A (Based on OPI patent )

Original IPC: H04B-7/26(I,DE,20060101,A,F) H04B-7/26(I,M,98,20060101,C) H04Q-7/38

(I,DE,20060101,A,L) H04Q-7/38(I,M,98,20060101,C)

Current IPC: H04B-7/26(I,DE,20060101,A,F) H04B-7/26(I,M,98,20060101,C) H04Q-7/38

(I,DE,20060101,A,L) H04Q-7/38(I,M,98,20060101,C)|DE 69839328 T2 (Update 200933 E)

Publication Date: 20090514

\*\*Kanalstruktur fuer Kommunikationssysteme\*\*

Assignee: QUALCOMM INC; US (QCOM)

Inventor: JOU Y REZAIIFAR R TIEDEMANN E G

Language: DE

Application: DE 69839328 A 19980916 (Local application) EP 200526669 A 19980916 (Application)

Priority: US 1997931535 A 19970916

Related Publication: EP 1641147 A (Based on OPI patent )

Original IPC: H04B-7/26(B,I,H,EP,20060101,20060309,A,F) H04B-7/26

(B,I,M,98,20060101,20060309,C)

Current IPC: H04B-7/26(B,I,H,EP,20060101,20060309,A,F) H04B-7/26

(B,I,M,98,20060101,20060309,C)

Current ECLA class: H04B-7/26T10 H04Q-7/38C2 H04Q-7/38H

Current ECLA ICO class: T04B-7:185S8 T04Q-7:22S3 T04Q-7:32E4 T04Q-7:38C2 T04Q-7:38C8

T04Q-7:38H4 T04W-36:18 T04W-52:02

Claim: Ein Kanalaufbau bzw. -struktur fuer Kommunikationssysteme, die Folgendes aufweist:  
mindestens einen Fundamentalkanal zum Senden von Verkehrsdaten, Sprachdaten und Signalisierung,  
gekennzeichnet durch: einen Zusatzkanal zum Senden von Verkehrsdaten; einen Paging-Kanal zum  
Senden von Paging-Nachrichten; und wobei der Fundamentalkanal und der Zusatzkanal (supplemental  
channel) in der Lage sind, gleichzeitig zu senden bzw. gesendet zu werden und die Kanalstruktur  
weiterhin einen Pilot-/Steuerkanal aufweist zum Senden eines Piloten und Steuernachrichten, wobei die  
Steuernachrichten gesendet werden ueber Steuerrahmen und wobei jeder der Steuerrahmen einen  
Bruchteil eines Verkehrskanalrahmens ist und die Steuernachrichten eine

Rueckwaertsverbindungsdatenanfrage aufweisen.

### European Patent Office

Publication Number: EP 1016303 A2 (Update 200035 E)

Publication Date: 20000705

**\*\*KANALSTRUKTUR FUR KOMMUNIKATIONSSYSTEMEN CHANNEL STRUCTURE FOR COMMUNICATION SYSTEMS STRUCTURE DE VOIES POUR SYSTEMES DE COMMUNICATION\*\***

Assignee: QUALCOMM Incorporated, 5775 Morehouse Drive, San Diego, CA 92121-1714, US (QCOM)

Inventor: REZAIIFAR, Ramin, 7580 Charmant Drive 2224, San Diego, CA 92121, US TIEDEMANN, Edward, G., Jr., 4350 Bromfield Avenue, San Diego, CA 92122, US JOU, Yu-Cheun, 9979 Riverhead Drive, San Diego, CA 92129, US

Agent: Walsh, Michael Joseph, TOMKINS CO., 5, Dartmouth Road, Dublin 6, IE

Language: EN

Application: EP 1998948285 A 19980916 (Local application) WO 1998US19334 A 19980916 (PCT Application)

Priority: US 1997931535 A 19970916

Related Publication: WO 1999014975 A (Based on OPI patent )

Designated States: (Regional Original) DE FI FR GB IT SE

Original IPC: H04Q-7/38(A) H04B-7/26(B)

Current IPC: H04B-7/185(R,A,N,M,EP,20060101,20051008,A) H04B-7/185

(R,N,M,EP,20060101,20051008,C) H04B-7/26(R,I,M,EP,20060101,20051008,A) H04B-7/26

(R,I,M,EP,20060101,20051008,C) H04J-1/00(B,I,M,RU,20060101,20050627,A,L) H04J-1/00

(B,I,M,RU,20060101,20050627,C,L) H04J-13/00(B,I,M,RU,20060101,20040720,A,L) H04J-13/00

(B,I,M,RU,20060101,20040720,C,L) H04W-36/00(R,N,M,EP,20090101,20090105,C) H04W-36/18

(R,N,M,EP,20090101,20090105,A) H04W-52/00(R,N,M,EP,20090101,20090105,C) H04W-52/02

(R,N,M,EP,20090101,20090105,A)

Current ECLA class: H04B-7/26T10 H04Q-7/38C2 H04Q-7/38H

Current ECLA ICO class: T04B-7:185S8 T04Q-7:22S3 T04Q-7:32E4 T04Q-7:38C2 T04Q-7:38C8

T04Q-7:38H4 T04W-36:18 T04W-52:02

Original Abstract: In a channel structure for use in communication systems, two sets of physical channels, one for the forward link (50) and another for the reverse link (52), are utilized to facilitate communication of a variety of logical channels. The physical channels comprise data and control channels. In the exemplary embodiment, the data channels comprise fundamental channels which are used to transmit voice traffic, data traffic, high speed data, and other overhead information and supplemental channels which are used to transmit high speed data. The fundamental channels can be released when the remote stations are idle to more fully utilize the available capacity. The control channels are used to transmit paging and control messages and scheduling information. IEP 1016303 B1 (Update 200602 E)

Publication Date: 20051214

**\*\*KANALSTRUKTUR FUR KOMMUNIKATIONSSYSTEMEN CHANNEL STRUCTURE FOR COMMUNICATION SYSTEMS STRUCTURE DE VOIES POUR SYSTEMES DE COMMUNICATION\*\***

Assignee: QUALCOMM INCORPORATED, 5775 Morehouse Drive, San Diego, CA 92121-1714, US (QCOM)

Inventor: REZAIIFAR, Ramin, 7580 Charmant Drive 2224, San Diego, CA 92121, US TIEDEMANN, Edward, G., Jr., 4350 Bromfield Avenue, San Diego, CA 92122, US JOU, Yu-Cheun, 9979 Riverhead Drive, San Diego, CA 92129, US

Agent: Walsh, Michael Joseph, TOMKINS CO., 5, Dartmouth Road, Dublin 6, IE

Language: EN

Application: EP 1998948285 A 19980916 (Local application) WO 1998US19334 A 19980916 (PCT Application)

Priority: US 1997931535 A 19970916

Related Publication: WO 1999014975 A (Based on OPI patent )

Designated States: (Regional Original) DE FI FR GB IT SE

Original IPC: H04Q-7/38(A) H04B-7/26(B)

Current IPC: H04B-7/185(R,A,N,M,EP,20060101,20051008,A) H04B-7/185

(R,N,M,EP,20060101,20051008,C) H04B-7/26(R,I,M,EP,20060101,20051008,A) H04B-7/26

(R,I,M,EP,20060101,20051008,C) H04J-1/00(B,I,M,RU,20060101,20050627,A,L) H04J-1/00

(B,I,M,RU,20060101,20050627,C,L) H04J-13/00(B,I,M,RU,20060101,20040720,A,L) H04J-13/00

(B,I,M,RU,20060101,20040720,C,L) H04W-36/00(R,N,M,EP,20090101,20090105,C) H04W-36/18

(R,N,M,EP,20090101,20090105,A) H04W-52/00(R,N,M,EP,20090101,20090105,C) H04W-52/02

(R,N,M,EP,20090101,20090105,A)

Current ECLA class: H04B-7/26T10 H04Q-7/38C2 H04Q-7/38H

Current ECLA ICO class: T04B-7:185S8 T04Q-7:22S3 T04Q-7:32E4 T04Q-7:38C2 T04Q-7:38C8

T04Q-7:38H4 T04W-36:18 T04W-52:02

Claim: 1.Ein Kanalaufbau bzw. -struktur in einem Telekommunikationssystem, in de m Spreizspektrumtechniken verwendet werden, und in dem die Kanalstrukturu r zumindest einen Paging-Kanal unterstutzt, wobei jeder Paging-Kanal ve rwendet wird zum Senden von Paging-Nachrichten zu einer Vielzahl von en tfernten Stationen (6), und wobei die Kanalstruktur einen Zusatzkanal ( supplemental channel) unterstutzt, wobei jeder Zusatzkanal verwendet wi rd zum Senden von Hochgeschwindigkeits-Verkehrsdaten bzw. -Datenverkehr , wobei die Kanalstruktur \*\*gekennzeichnet ist durch\*\*: \* einen Fundamentalkanal zum Austauschen von Sprachverkehr und Datenver kehr zwischen einer entfernten Station (6) der Vielzahl von entfernte n Stationen und einer anderen Station, wobei der Fundamentalkanal nur verwendet werden kann, wenn die entfernte Station (6) in einem Verke hrskanalmodus ist; und \* einen Steuerkanal zum Austauschen von Signalisierungsinformation zwis chen der entfernten Station (6) und der anderen Station, wobei der St euerkanal nur verwendet werden kann, wenn die entfernte Station in de m Verkehrskanalmodus ist. 1.A channel structure in a telecommunications system in which spread spec trum techniques are used, and in which said channel structure supports at least one paging channel, wherein each paging channel is for transmi tting paging messages to a plurality of remote stations (6), and in whi ch the channel structure supports a supplemental channel, wherein each supplemental channel is for transmitting high speed data traffic, the c hannel structure \*\*characterised by\*\*: \* a fundamental channel for exchanging voice traffic and data traffic b etween a remote station (6) of said plurality of remote stations and another station, wherein said fundamental channel can be used only wh en said remote station (6) is in a traffic channel mode; and \* a control channel for exchanging signaling information between said r emote station (6) and said another station, wherein said control chan nel can be used only when said remote station is in said traffic chan nel mode. 1.Structure de canal dans un systeme de telecommunication dans lequel on utilise des techniques a etatement de spectre, la structure de canal co mportant au moins un canal de teleavertissement, chaque canal de teleav ertissement etant destine a emettre des messages de teleavertissement v ers une pluralite de postes eloignes (6), la structure de canal comport ant un canal supplementaire, chaque canal supplementaire etant destine a transmettre des donnees a haut debit, la structure de canal etant \*\* caracterisee par\*\*: \* un canal fondamental pour echanger des communications vocales et des communications de donnees entre un poste eloigne (6) de la pluralite de postes eloignes et une autre station, le canal fondamental ne pouv ant etre utilise que quand le poste eloigne (6) est dans un mode de c anal de communication; et \* un canal de commande pour echanger des informations de signalisation entre le poste eloigne (6) et ladite autre station, le canal de comma nde ne pouvant etre utilise que quand le poste eloigne est dans le mo de de canal de communication.IEP

1641147 A1 (Update 200623 E)

Public ation Date: 20060329

\*\*Kanalstruktur fur Kommunikationssysteme Channe l structure for communication systems Structure

de canal pour systeme s de communication\*\*

Assignee: Qualcomm, Incorporated, 5775 Morehouse Drive, San Diego, CA 92121-1714, US (QCOM)

Inventor: Rezaiifar, Ramin, 7580 Charmant Drive 2224, San Diego, CA 92121, US TIEDEMANN E

Jou, Yu-Cheun, 9979 Riverhead Drive, San Diego, CA 92129, US

Agent: Gates, Marie Christina Esther, c/o Tomkins Co., 5 Dartmouth Road, Dublin 6, IE

Language: EN

Application: EP 1998948285 A 19980916 (Division of application) EP 200526669 A 19980916 (Local application)

Priority: US 1997931535 A 19970916

Related Publication: EP 1016303 A (Division of patent)

Designated States: (Regional Original) AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI

Original IPC: H04B-7/26(B,I,H,EP,20060101,20060104,A,F) H04Q-7/38

(B,I,H,EP,20060101,20060104,A,L)

Current IPC: H04B-7/26(B,I,H,EP,20060101,20060104,A,F) H04B-7/26

(B,I,H,EP,20060101,20060104,C,L) H04W-36/00(R,N,M,EP,20090101,20090105,C) H04W-36/18

(R,N,M,EP,20090101,20090105,A) H04W-72/00(R,N,M,EP,20090101,20090105,C) H04W-72/04

(R,N,M,EP,20090101,20090105,A) H04W-76/00(R,I,M,EP,20090101,20090105,C) H04W-76/04

(R,I,M,EP,20090101,20090105,A)

Current ECLA class: H04B-7/26S12 H04Q-7/22S3P H04W-76/04

Current ECLA ICO class: T04B-7:185S8 T04Q-7:38H4 T04W-36:18 T04W-72:04

Original Abstract: In a channel structure for use in communication systems, two sets of physical channels, one for the forward link (50) and another for the reverse link (52), are utilized to facilitate communication of a variety of logical channels. The physical channels comprise data and control channels. In the exemplary embodiment, the data channels comprise fundamental channels which are used to transmit voice traffic, data traffic, high speed data, and other overhead information and supplemental channels which are used to transmit high speed data. The fundamental channels can be released when the remote stations are idle to more fully utilize the available capacity. The control channels are used to transmit paging and control messages and scheduling information.

Claim: 1.A channel structure for communication systems comprising: \* at least one fundamental channel for transmitting traffic data, voice data, and signaling; \* a supplemental channel for transmitting traffic data; and \* a paging channel for transmitting paging messages.IEP 1641147 B1 (Up date 200825 E)

Publication Date: 20080402

\*\*Kanalstruktur fur Kommuni kationssysteme Channel structure for communication systems Structure de canal pour systemes de communication\*\*

Assignee: Qualcomm, Incorpo rated, 5775 Morehouse Drive, San Diego, CA 92121-1714, US (QCOM)

Inve ntor: Rezaiifar, Ramin, 7580 Charmant Drive 2224, San Diego, CA 92121 , US TIEDEMANN E

Jou, Yu-Cheun, 9979 Riverhead Drive, San Diego, CA 9 2129, US

Agent: Gates, Marie Christina Esther, c/o Tomkins Co., 5 Da rtmouth Road, Dublin 6, IE

Language: EN

Application: EP 1998948285 A 19980916 (Division of application) EP 200526669 A 19980916 (Local app lication)

Priority: US 1997931535 A 19970916

Related Publication: EP 1016303 A (Division of patent)

Designated States: (Regional Original ) DE FI FR GB IT SE

Original IPC: H04B-7/26(B,I,H,EP,20060101,2006010 4,A,F) H04B-7/26

(B,I,M,98,20060101,20060104,C) H04Q-7/38(B,I,H,EP,200 60101,20060104,A,L) H04Q-7/38

(B,I,M,98,20060101,20060104,C)

Current I PC: H04B-7/26(B,I,H,EP,20060101,20060104,A,F) H04B-7/26(B,I,H,EP,2006

0101,20060104,C,F) H04W-36/00(R,N,M,EP,20090101,20090105,C) H04W-36/1 8

(R,N,M,EP,20090101,20090105,A) H04W-72/00(R,N,M,EP,20090101,20090105 ,C) H04W-72/04



(R,N,M,EP,20090101,20090105,A) H04W-76/00(R,I,M,EP,2009 0101,20090105,C) H04W-76/04  
(R,I,M,EP,20090101,20090105,A)

Current ECLA class: H04B-7/26S12 H04Q-7/22S3P H04W-76/04

Current ECLA ICO class: T04B-7:185S8 T04Q-7:38H4 T04W-36:18 T04W-72:04

Claim: 1.Ein Kanalaufbau bzw. -struktur für Kommunikationssysteme, die Folgendes aufweist: \* mindestens einen Fundamentalkanal zum Senden von Verkehrsdaten, Sprachdaten und Signalisierung, \*\*gekennzeichnet durch\*\*: \* einen Zusatzkanal zum Senden von Verkehrsdaten; \* einen Paging-Kanal zum Senden von Paging-Nachrichten; und wobei der Fundamentalkanal und der Zusatzkanal (supplemental channel) in der Lage sind, gleichzeitig zu senden und die Kanalstruktur weiterhin einen Pilot-/Steuerkanal aufweist zum Senden eines Piloten und Steuernachrichten, wobei die Steuernachrichten gesendet werden über Steuerrahmen und wobei jeder der Steuerrahmen einen Bruchteil eines Verkehrskanalrahmens ist und die Steuernachrichten eine Rückwärtsverbindungsdatenanfrage aufweisen. 1.A channel structure for communication systems comprising: \* at least one fundamental channel for transmitting traffic data, voice data, and signaling \*\*characterized by\*\* \* a supplemental channel for transmitting traffic data; \* a paging channel for transmitting paging messages; and wherein said fundamental channel and said supplemental channel are capable of concurrent transmission and said channel structure further comprises a pilot/control channel for transmitting a pilot and control messages, said control messages are transmitted over control frames and wherein each of said control frames is a fraction of a traffic channel frame and said control messages comprise a reverse link data request. 1.Structure de canal pour systèmes de communication comprenant: \* au moins un canal fondamental pour transmettre des données de communication et données vocales et de la signalisation, \*\*caractérisée par\* \* un canal supplémentaire pour transmettre des données de communication; un canal de téléavertissement pour transmettre des messages de téléavertissement; et dans laquelle le canal fondamental et le canal supplémentaire sont aptes à une transmission simultanée et la structure de canal comprend en outre un canal pilote/de commande pour transmettre des messages pilotes et de commande, les messages de commande étant transmis sur des trames de commande, chacune des trames de commande étant une fraction d'une trame de canal de communication, et les messages de commande comprenant une requête de données en liaison inverse.

## Japan

Publication Number: JP 2001517049 W (Update 200172 E)

Publication Date: 20011002

Assignee: QUALCOMM INC; US (QCOM)

Language: JA (56 pages)

Application: JP 2000512378 A 19980916 (Local application) WO 1998US19334 A 19980916 (PCT Application)

Priority: US 1997931535 A 19970916

Related Publication: WO 1999014975 A (Based on OPI patent )

Original IPC: H04Q-7/22(A) H04Q-7/28(B) H04Q-7/36(B)

Current IPC: H04B-7/185(R,A,N,M,EP,20060101,20051008,A) H04B-7/185

(R,N,M,EP,20060101,20051008,C) H04B-7/26(R,I,M,EP,20060101,20051008,A) H04B-7/26

(R,I,M,EP,20060101,20051008,C) H04J-1/00(B,I,M,RU,20060101,20050627,A,L) H04J-1/00

(B,I,M,RU,20060101,20050627,C,L) H04J-13/00(B,I,M,RU,20060101,20040720,A,L) H04J-13/00

(B,I,M,RU,20060101,20040720,C,L) H04W-36/00(R,N,M,EP,20090101,20090105,C) H04W-36/18

(R,N,M,EP,20090101,20090105,A) H04W-52/00(R,N,M,EP,20090101,20090105,C) H04W-52/02

(R,N,M,EP,20090101,20090105,A)

Current ECLA class: H04B-7/26T10 H04Q-7/38C2 H04Q-7/38H

Current ECLA ICO class: T04B-7:185S8 T04Q-7:22S3 T04Q-7:32E4 T04Q-7:38C2 T04Q-7:38C8

T04Q-7:38H4 T04W-36:18 T04W-52:02

Current JP FI-Terms: H04B-7/26 105 D H04Q-7/00 543 H04Q-7/00 547 H04Q-7/04 K

Current JP F-Terms: 5K067 5K067AA15 5K067BB04 5K067CC10 5K067EE24 5K067GG08

5K067JJ12 5K067JJ13 5K067JJ15 5K067JJ36|JP 4152584 B2 (Update 200863 E)

Publication Date: 20080917

**\*\*The channel structure of a communication system\*\***

Assignee: QUALCOMM INC; JP (QCOM)

Language: JA (27 pages)

Application: WO 1998US19334 A 19980916 (PCT Application) JP 2000512378 A 19980916 (Local application)

Priority: US 1997931535 A 19970916

Related Publication: JP 2001517049 A (Previously issued patent) WO 1999014975 A (Based on OPI patent )

Original IPC: H04Q-7/38(B,I,H,JP,20060101,20080828,A,F) H04Q-7/38

(B,I,M,98,20060101,20080828,C)

Current IPC: H04B-7/185(R,N,M,EP,20060101,20051008,A) H04B-7/185

(R,N,M,EP,20060101,20051008,C) H04B-7/26(R,I,M,EP,20060101,20051008,A) H04B-7/26

(R,I,M,EP,20060101,20051008,C) H04J-1/00(B,I,M,RU,20060101,20050627,A,L) H04J-1/00

(B,I,M,RU,20060101,20050627,C,L) H04J-13/00(B,I,M,RU,20060101,20040720,A,L) H04J-13/00

(B,I,M,RU,20060101,20040720,C,L) H04W-36/00(R,N,M,EP,20090101,20090105,C) H04W-36/18

(R,N,M,EP,20090101,20090105,A) H04W-52/00(R,N,M,EP,20090101,20090105,C) H04W-52/02

(R,N,M,EP,20090101,20090105,A)

Current ECLA class: H04B-7/26T10 H04Q-7/38C2 H04Q-7/38H

Current ECLA ICO class: T04B-7:185S8 T04Q-7:22S3 T04Q-7:32E4 T04Q-7:38C2 T04Q-7:38C8

T04Q-7:38H4 T04W-36:18 T04W-52:02

Current JP FI-Terms: H04Q-7/00 547 (main, A) H04Q-7/00 543 (secondary, B) H04B-7/26 105 D

H04Q-7/00 543 H04Q-7/00 547 H04Q-7/04 K

Current JP F-Terms: 5K067 5K067AA15 5K067BB04 5K067CC10 5K067EE24 5K067GG08

5K067JJ12 5K067JJ13 5K067JJ15 5K067JJ36

Original Abstract: This invention relates to the channel structure of a communication system.

Claim: Spread spectrum technology is used and a channel structure supports a paging channel,It is for each paging channel to transmit a paging message to several remote station|games,The said channel structure supports an auxiliary|assistant channel,

## Republic of Korea

Publication Number: KR 2001024009 A (Update 200161 E)

Publication Date: 20010326

Assignee: QUALCOMM INC (QCOM)

Language: KO

Application: KR 2000702738 A 20000315 (Local application)

Priority: US 1997931535 A 19970916

Original IPC: H04B-7/26(A)

Current IPC: H04B-7/26(A)|KR 2006114392 A (Update 200734 E)

Publication Date: 20061106

Assignee: QUALCOMM INC (QCOM)

Inventor: REZAIIFAR, RAMIN JOU, YU CHEUN TIEDEMANN, EDWARD G. JR.

Language: KO

Application: KR 2006721579 A 20061018 (Local application) WO 1998US19334 A 19980916 (PCT Application)

Priority: US 1997931535 A 19970916

Related Publication: WO 1999014975 A (Based on OPI patent )

Original IPC: H04B-7/02(B,I,H,KR,20060101,20061101,A,F) H04B-7/02

(B,I,M,98,20060101,20061101,C) H04B-7/24(B,I,H,KR,20060101,20061101,A,F) H04B-7/24

(B,I,M,98,20060101,20061101,C) H04B-7/26(B,I,H,KR,20060101,20061101,A,F) H04B-7/26

(B,I,M,98,20060101,20061101,C) H04Q-7/38(B,I,H,KR,20060101,20061101,A,F) H04Q-7/38  
(B,I,M,98,20060101,20061101,C)

Current IPC: H04B-7/02(B,I,H,KR,20060101,20061101,A,F) H04B-7/02

(B,I,M,98,20060101,20061101,C) H04B-7/24(B,I,H,KR,20060101,20061101,A,F) H04B-7/24

(B,I,M,98,20060101,20061101,C) H04B-7/26(B,I,H,KR,20060101,20061101,A,F) H04B-7/26

(B,I,M,98,20060101,20061101,C) H04Q-7/38(B,I,H,KR,20060101,20061101,A,F) H04Q-7/38

(B,I,M,98,20060101,20061101,C)

Current ECLA class: H04B-7/26T10 H04Q-7/38C2 H04Q-7/38H

Current ECLA ICO class: T04B-7:185S8 T04Q-7:22S3 T04Q-7:32E4 T04Q-7:38C2 T04Q-7:38C8

T04Q-7:38H4 T04W-36:18 T04W-52:02IKR 685687 B1 (Update 200850 E)

Publication Date: 20070223

**\*\*Channel strucure for communication systems\*\***

Assignee: QUALCOMM INC (QCOM)

Inventor: REZAIIFAR R JOU Y C TIEDEMANN E

Language: KO

Application: KR 2000702738 A 20000315 (Local application) WO 1998US19334 A 19980916 (PCT Application)

Priority: US 1997931535 A 19970916

Related Publication: KR 2001024009 A (Previously issued patent) WO 1999014975 A (Based on OPI patent )

Original IPC: H04B-7/26(B,I,H,KR,20060101,20000824,A,F) H04B-7/26

(B,I,M,98,20060101,20000824,C)

Current IPC: H04B-7/26(B,I,H,KR,20060101,20000824,A,F) H04B-7/26

(B,I,M,98,20060101,20000824,C)IKR 803956 B1 (Update 200862 E)

Publication Date: 20080215

**\*\*CHANNEL STRUCTURE FOR COMMUNICATION SYSTEMS\*\***

Assignee: QUALCOMM INC; US (QCOM)

Inventor: REZAIIFAR, RAMIN JOU, YU-CHEUN TIEDEMANN, EDWARD, G. JR.

Language: KO

Application: WO 1998US19334 A 19980916 (PCT Application) KR 2000702738 A 20000315

(Division of application) KR 2006721579 A 20061018 (Local application)

Priority: US 1997931535 A 19970916

Related Publication: KR 2006114392 A (Previously issued patent) WO 1999014975 A (Based on OPI patent )

Original IPC: H04B-7/02(I,KR,20060101,A,L) H04B-7/02(I,M,98,20060101,C) H04B-7/24

(I,KR,20060101,A,L) H04B-7/24(I,M,98,20060101,C) H04B-7/26(I,KR,20060101,A,F) H04B-7/26

(I,M,98,20060101,C) H04Q-7/38(I,KR,20060101,A,L) H04Q-7/38(I,M,98,20060101,C)

Current IPC: H04B-7/02(I,KR,20060101,A,L) H04B-7/02(I,M,98,20060101,C) H04B-7/24

(I,KR,20060101,A,L) H04B-7/24(I,M,98,20060101,C) H04B-7/26(I,KR,20060101,A,F) H04B-7/26

(I,M,98,20060101,C) H04Q-7/38(I,KR,20060101,A,L) H04Q-7/38(I,M,98,20060101,C)

Original Abstract: In the channel structure of being used for the communications system, the physical channel of 2 set one by one respects various logical channels of communications for the forward link (50) and reverse link (52) to easily do and it is used. The physical channel provides data and control channel. The data channel in the illustrative embodiment provides the fundamental channel, which is used it transmits the voice traffic, data traffic, and high-speed data and the other additional information and the supplemental channel which is used to transmit high-speed data. When the remote station is at leisure, in order that the available capacity is more completely used, the fundamental channel can be canceled. The control channel is used when paging, the control message and scheduling information are transmitted. The channel structure of the communications system. Image 1/1

Claim: [CLAIM 1] The communications system including traffic data, the variable rate channel phosphorus transmitting audio data and signaling, and operates among the dedicated mode supporting

the single transmission or the common mode supporting multiplex to a one, one or more fundamental channels, and the paging channel. The paging channel is the supplemental channel transmitting traffic data, and transmits the , supplemental channel and paging message having data rate which distinguished the supplemental channel is controlled by demand from the side receiving the supplemental channel the supplemental channel with one or more fundamental channels. [CLAIM 2] The communications system of claim 1, wherein the fundamental channel is supported by the soft handoff; and the fundamental channel is allocated for the communications backbone in other words. [CLAIM 3] The communications system of claim 2, wherein the cycle of the deactivation about the remote station exceeds the first prescribed threshold; and the fundamental channel is canceled with the remote station. [CLAIM 4] The communications system of claim 3, wherein the cycle of the deactivation about the remote station exceeds the first prescribed threshold; and the state of communications is maintained. [CLAIM 5] The communications system of claim 4, wherein the cycle of the deactivation about the remote station exceeds the second prescribed threshold; and the state of communications is not maintained. [CLAIM 6] The communications system transmitted to data rate of claim 1, wherein the supplemental channel is allocated for the high speed data transmission in the remote station; it can data-send to the supplemental channel among a plurality of data rates to one; the supplemental channel is not supported by the soft handoff; the supplemental channel is transmitted from the best base station within the remote station active set; and the supplemental channel is fixed for the transmission period in other words. [CLAIM 7] The communications system which data rate is allocated according to the power head room of the document source; and the fixed data rate as described above is allocated according to the energy per bit required for transmission in other words of claim 6, wherein the fixed data rate as described above is allocated according to amount of transmitted data; and it above statement is fixed. [CLAIM 8] The communications system including the pilot / control channel of claim 1, wherein the fundamental channel and supplemental channel can the simultaneous transmission; and the communications system transmits the pilot and control message in other words. [CLAIM 9] The communications system of claim 8, wherein the control message is transmitted in the control frame and the control frame is a part of the traffic channel frame or the control message includes the reverse link data request. [CLAIM 10] The communications system of claim 9, wherein the reverse link data request includes the display toward the amount of transmitted data; and the reverse link data request includes the display about the power head room in other words. [CLAIM 11] The communications system which includes the multi shell N power level display; the control message includes the multi-carrier power level of the carrier wave of the remote station active set; and the control message includes the erasure indicator bit showing the deletion state of data frame which before is received in other words of claim 8, wherein the control message shows the received electrical power level toward the pilot of the remote station active set. [CLAIM 12] The communications system which is transmitted from the base station; it is transmitted to the multi shell N power level in the first control frame of the traffic channel frame; it is transmitted to the multi-carrier power level in the second control frame of the traffic channel frame; and the erasure indicator bit is transmitted in the third control frame of the traffic channel frame of claim 11, wherein the supplemental channel is selected according to the multi shell N power level. [CLAIM 13] The communications system of claim 9, wherein the reverse link data request is transmitted in the fourth control frame of the traffic channel frame. [CLAIM 14] The communications system including the control channel of claim 1, wherein the scheduling information and signaling are transmitted. [CLAIM 15] The communications system which includes data rate; it includes the period about the allocated transmission the scheduling information; signaling includes the erasure indicator bit showing the deletion state of data frame which before is received; and includes the indicator bit expressing whether or not message exists in the fundamental channel about the remote station the signaling information in other words of claim 14, wherein the scheduling information is allocated. [CLAIM 16] The communications system of claim 1, wherein the paging channel the cycle of the deactivation about the remote station exceeds the first prescribed threshold is received to the specific- slotted mode with the remote station; and in other words the paging channel is received to the slotted mode with the remote station in case the cycle of the deactivation about the remote station exceeds the second prescribed threshold. [CLAIM 17] The

communications system equipped with the synchronous channel, transmitting the pilot channel or the system timing information the origination message and the access channel transmitting the paging response message of claim 1, wherein the pilot is transmitted. [CLAIM 18] The transmission device for the , communications system which includes traffic data at one or more fundamental channels, audio data and signaling are transmitted, the supplemental channel transmits traffic data, and the transmitter transmitting the paging message in the paging channel, and in which one or more fundamental channels are the variable rate channel operating among the dedicated mode supporting the single transmission or the common mode supporting multiplex to a one, and in which the supplemental channel is distinguished from one or more fundamental channels, and which moreover, the supplemental channel has data rate controlled by demand from the side receiving the supplemental channel. [CLAIM 19] The receiving device for the , communications system which includes traffic data transmitted in one or more fundamental channels, audio data and signaling are received, traffic data transmitted in the supplemental channel are received, and the receiver receiving the paging message transmitted in the paging channel, and in which one or more fundamental channels are the variable rate channel operating among the dedicated mode supporting the single transmission or the common mode supporting multiplex to a one, and in which the supplemental channel is distinguished from one or more fundamental channels, and which moreover, the supplemental channel has data rate controlled by demand from the side receiving the supplemental channel. [CLAIM 20] Deletion. [CLAIM 21] The , method of transmission which includes traffic data in one or more fundamental channels it is the method for transmitting data in the wireless telecommunications system, the step transmitting audio data and signaling, the step that the supplemental channel transmits traffic data, and the step that the paging channel transmits the paging message, and in which one or more fundamental channels are the variable rate channel operating among the dedicated mode supporting the single transmission or the common mode supporting multiplex to a one, and in which the supplemental channel is distinguished from one or more fundamental channels, and which moreover, the supplemental channel has data rate controlled by demand from the side receiving the supplemental channel. [CLAIM 22] The , method of transmission for more including step of claim 21, wherein the fundamental channel and supplemental channel can the simultaneous transmission; and data transmission process transmits the pilot and control message in the pilot / control channel. [CLAIM 23] The method of transmission of claim 22, wherein the control message is transmitted in the control frame and the control frame is a part of the traffic channel frame or the control message includes the reverse link data request. [CLAIM 24] The method of transmission of claim 23, wherein the reverse link data request includes the display toward the amount of transmitted data; and the reverse link data request includes the display about the power head room in other words. [CLAIM 25] The method of transmission which includes the multi shell N power level display; the control message includes the multi-carrier power level of the carrier wave of the remote station active set; the control message includes the erasure indicator bit showing the deletion state of data frame which before is received and the multi-carrier power level is transmitted to the supplemental channel from the base station selected according to the multi shell N power level; the multi shell N power level is transmitted in the first control frame of the traffic channel frame; the multi-carrier power level is transmitted in the second control frame of the traffic channel frame; and the erasure indicator bit is transmitted in the third control frame of the traffic channel frame of claim 23, wherein the control message shows the received electrical power level toward the pilot of the remote station active set. [CLAIM 26] The method of transmission of claim 23, wherein the paging channel the cycle of the deactivation about the remote station exceeds the first prescribed threshold is received to the specific- slotted mode with the remote station; and the paging channel is received to slotted mode with the remote station in case the cycle of the deactivation about the remote station exceeds the second prescribed threshold. [CLAIM 27] The , transmission device which includes traffic data in one or more fundamental channels as the transmission device for the communications system, the means transmitting audio data and signaling, the means, and the means, and in which one or more fundamental channels are the variable rate channel operating among the dedicated mode supporting the single transmission or the common mode supporting multiplex to a one, and in which the supplemental channel is distinguished from one or more

fundamental channels, and which moreover, the supplemental channel has data rate controlled by demand from the side receiving the supplemental channel. The means the supplemental channel transmits traffic data. The means the paging channel transmits the paging message. [CLAIM 28] The transmission device which more includes the means; and the control message is transmitted in the control frame and the control frame is a part of the traffic channel frame or the control message includes the reverse link data request of claim 27, wherein the fundamental channel and supplemental channel can the simultaneous transmission; and the transmission device transmits the , pilot and control message. [CLAIM 29] The transmission device of claim 28, wherein the reverse link data request includes the display toward the amount of transmitted data; and the reverse link data request includes the display about the power head room in other words. [CLAIM 30] The , processor which includes the processing circuit comprised traffic data in one or more fundamental channels, audio data and signaling are transmitted, the supplemental channel transmits traffic data, and the paging channel transmits the paging message, and in which one or more fundamental channels are the variable rate channel operating among the dedicated mode supporting the single transmission or the common mode supporting multiplex to a one, and in which the supplemental channel is distinguished from one or more fundamental channels, and which moreover, the supplemental channel has data rate controlled by demand from the side receiving the supplemental channel. [CLAIM 31] Processor of claim 30, wherein the fundamental channel and supplemental channel can the simultaneous transmission; it is more comprised of the processing circuit in order to transmit the , pilot and control message; and the control message is transmitted in the control frame and the control frame is a part of the traffic channel frame or the control message includes the reverse link data request. [CLAIM 32] Processor of claim 31, wherein the reverse link data request includes the display toward the amount of transmitted data; and the reverse link data request includes the display about the power head room in other words. [CLAIM 33] The , machine readable media is the machine readable media having one or more commands transmitting data in the wireless telecommunications system, and the paging channel transmits the paging message while processor transmits traffic data, and audio data and signaling in one or more fundamental channels and the supplemental channel transmitting traffic data in case of being performed by processor, and in which one or more fundamental channels are the variable rate channel operating among the dedicated mode supporting the single transmission or the common mode supporting multiplex to a one, and in which the supplemental channel is distinguished from one or more fundamental channels, and which moreover, the supplemental channel has data rate controlled by demand from the side receiving the supplemental channel. [CLAIM 34] The machine readable media which has one or more commands; and the control message is transmitted in the control frame and the control frame is a part of the traffic channel frame or the control message includes the reverse link data request of claim 33, wherein the fundamental channel and supplemental channel can the simultaneous transmission; and processor additionally transmits the pilot and control message in case the machine readable media is performed by processor. [CLAIM 35] The machine readable media of claim 34, wherein the reverse link data request includes the display toward the amount of transmitted data; and the reverse link data request includes the display about the power head room in other words. [CLAIM 36] The , data receiving method which includes traffic data in one or more fundamental channels it is the method for receiving data by the wireless telecommunications system, the step receiving audio data and signaling, the step receiving traffic data by the supplemental channel, and the step receiving the paging message by the paging channel, and in which one or more fundamental channels are the variable rate channel operating among the dedicated mode supporting the single transmission or the common mode supporting multiplex to a one, and in which the supplemental channel is distinguished from one or more fundamental channels, and which moreover, the supplemental channel has data rate controlled by demand from the side receiving the supplemental channel. [CLAIM 37] The , data receiving method for more including step of claim 36, wherein the fundamental channel and supplemental channel can the simultaneous transmission; and the receiving method receives the pilot and control message by the pilot / control channel. [CLAIM 38] The data receiving method of claim 37, wherein the control message is received in the control frame and the control frame is a part of the traffic channel frame or the control message includes the reverse link data

request. [CLAIM 39] The data receiving method of claim 38, wherein the reverse link data request includes the display toward the amount of transmitted data; and the reverse link data request includes the display about the power head room in other words. [CLAIM 40] The data receiving method of claim 36, wherein the paging channel the cycle of the deactivation about the remote station exceeds the first prescribed threshold is received to the specific- slotted mode with the remote station; and in other words the paging channel is received to the slotted mode with the remote station in case the cycle of the deactivation about the remote station exceeds the second prescribed threshold. [CLAIM 41] The , receiving device which includes traffic data in one or more fundamental channels as the receiving device for the communications system, the means receiving audio data and signaling, the means receiving traffic data by the supplemental channel, and the means receiving the paging message by the paging channel, and in which one or more fundamental channels are the variable rate channel operating among the dedicated mode supporting the single transmission or the common mode supporting multiplex to a one, and in which the supplemental channel is distinguished from one or more fundamental channels, and which moreover, the supplemental channel has data rate controlled by demand from the side receiving the supplemental channel. [CLAIM 42] The receiving device which more includes the means; and the control message is received in the control frame and the control frame is a part of the traffic channel frame or the control message includes the reverse link data request of claim 41, wherein the fundamental channel and supplemental channel can the simultaneous transmission; and it receives the pilot and control message by the receiving device by the , pilot / control channel. [CLAIM 43] The receiving device of claim 42, wherein the reverse link data request includes the display toward the amount of transmitted data; and the reverse link data request includes the display about the power head room in other words. [CLAIM 44] The , processor which includes the processing circuit comprised traffic data in one or more fundamental channels, audio data and signaling are received, traffic data are received by the supplemental channel, and the paging message is received by the paging channel, and in which one or more fundamental channels are the variable rate channel operating among the dedicated mode supporting the single transmission or the common mode supporting multiplex to a one, and in which the supplemental channel is distinguished from one or more fundamental channels, and which moreover, the supplemental channel has data rate controlled by demand from the side receiving the supplemental channel. [CLAIM 45] Processor of claim 44, wherein the fundamental channel and supplemental channel can the simultaneous transmission; it is more comprised of the processing circuit in order to receive the pilot and control message by the , pilot / control channel; and the control message is received in the control frame and the control frame is a part of the traffic channel frame or the control message includes the reverse link data request. [CLAIM 46] Processor of claim 45, wherein the reverse link data request includes the display toward the amount of transmitted data; and the reverse link data request includes the display about the power head room in other words. [CLAIM 47] The , machine readable media is the machine readable media having one or more commands transmitting data in the wireless telecommunications system, and processor receives the paging message by the paging channel while processor receives traffic data, and audio data and signaling by one or more fundamental channels and processor receives traffic data by the supplemental channel in case of being performed by processor, and in which one or more fundamental channels are the variable rate channel operating among the dedicated mode supporting the single transmission or the common mode supporting multiplex to a one, and in which the supplemental channel is distinguished from one or more fundamental channels, and which moreover, the supplemental channel has data rate controlled by demand from the side receiving the supplemental channel. [CLAIM 48] The machine readable media which has one or more commands; and the control message is received in the control frame and the control frame is a part of the traffic channel frame or the control message includes the reverse link data request of claim 47, wherein the fundamental channel and supplemental channel can the simultaneous transmission; and processor additionally transmits the pilot and control message in case the machine readable media is performed by processor. [CLAIM 49] The machine readable media of claim 48, wherein the reverse link data request includes the display toward the amount of transmitted data; and the reverse link data request includes the display about the power head room in other words.

**Mexico**

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Publication Date: 20011001

Assignee: QUALCOMM INC (QCOM)

Inventor: TIEDEMANN E G JOU Y REZAIIFAR R

Language: ES

Application: MX 20002632 A 20000315 (Local application)

Priority: US 1997931535 A 19970916

Original IPC: H04Q-7/38(A) H04Q-7/38(A)

Current IPC: H04Q-7/38(A) H04Q-7/38(A)MX 219936 B (Update 200477 E)

Publication Date: 20040416

Assignee: QUALCOMM INC (QCOM)

Inventor: TIEDEMANN E G JOU Y REZAIIFAR R

Language: ES

Application: MX 20002632 A 20000315 (Local application) WO 1998US19334 A 19980916 (PCT Application)

Priority: US 1997931535 A 19970916

Related Publication: WO 1999014975 A (Based on OPI patent )

Original IPC: H04Q-7/38(A) H04Q-7/38(A)

Current IPC: H04Q-7/38(A) H04Q-7/38(A)

**Norway**

Publication Number: NO 200001334 A (Update 200034 E)

Publication Date: 20000510

Assignee: QUALCOMM INC (QCOM)

Inventor: REZAIIFAR R TIEDEMANN E G JOU Y

Language: NO

Application: NO 20001334 A 20000315 (Local application) WO 1998US19334 A 19980916 (PCT Application)

Priority: US 1997931535 A 19970916

Original IPC: H04Q(A)

Current IPC: H04Q(A)

Current ECLA class: H04B-7/26T10 H04Q-7/38C2 H04Q-7/38H

Current ECLA ICO class: T04B-7:185S8 T04Q-7:22S3 T04Q-7:32E4 T04Q-7:38C2 T04Q-7:38C8

T04Q-7:38H4 T04W-36:18 T04W-52:02INO 325590 B1 (Update 200844 E)

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Assignee: QUALCOMM INC; US (QCOM)

Inventor: REZAIIFAR R TIEDEMANN E G JOU Y

Language: NO

Application: NO 20001334 A 20000315 (Local application) WO 1998US19334 A 19980916 (PCT Application)

Priority: US 1997931535 A 19970916

Related Publication: NO 200001334 A (Previously issued patent)

Original IPC: H04B-7/185(N,NO,20060101,A,L) H04B-7/185(N,M,98,20060101,C) H04B-7/26

(I,NO,20060101,A,L) H04B-7/26(I,M,98,20060101,C) H04Q-7/22(I,NO,20060101,A,L) H04Q-7/22

(I,M,98,20060101,C) H04Q-7/28(I,NO,20060101,A,L) H04Q-7/28(I,M,98,20060101,C) H04Q-7/32

(N,NO,20060101,A,L) H04Q-7/32(N,M,98,20060101,C) H04Q-7/36(I,NO,20060101,A,L) H04Q-7/36

(I,M,98,20060101,C) H04Q-7/38(I,NO,20060101,A,F) H04Q-7/38(I,M,98,20060101,C)

Current IPC: H04B-7/185(R,N,M,NO,20060101,20070322,A,L) H04B-7/185

(R,N,M,NO,20060101,20070322,C,L) H04B-7/26(R,I,M,NO,20060101,20070322,A,L) H04B-7/26

(R,I,M,NO,20060101,20070322,C,L) H04J-1/00(B,I,M,RU,20060101,20050627,A,L) H04J-1/00



(B,I,M,RU,20060101,20050627,C,L) H04J-13/00(B,I,M,RU,20060101,20040720,A,L) H04J-13/00  
(B,I,M,RU,20060101,20040720,C,L) H04W-36/00(R,N,M,EP,20090101,20090105,C) H04W-36/18  
(R,N,M,EP,20090101,20090105,A) H04W-52/00(R,N,M,EP,20090101,20090105,C) H04W-52/02  
(R,N,M,EP,20090101,20090105,A)  
Current ECLA class: H04B-7/26T10 H04Q-7/38C2 H04Q-7/38H  
Current ECLA ICO class: T04B-7:185S8 T04Q-7:22S3 T04Q-7:32E4 T04Q-7:38C2 T04Q-7:38C8  
T04Q-7:38H4 T04W-36:18 T04W-52:02

**Russia**

Publication Number: RU 2233037 C2 (Update 200455 E)  
Publication Date: 20040720  
Assignee: QUALCOMM INC; US (QCOM)  
Language: RU  
Application: RU 2000109590 A 19980916 (Local application) WO 1998US19334 A 19980916 (PCT Application)  
Priority: US 1997931535 A 19970916  
Related Publication: WO 1999014975 A (Based on OPI patent )  
Original IPC: H04J-13/00(A)  
Current IPC: H04B-7/185(R,A,N,M,EP,20060101,20051008,A) H04B-7/185  
(R,N,M,EP,20060101,20051008,C) H04B-7/26(R,I,M,EP,20060101,20051008,A) H04B-7/26  
(R,I,M,EP,20060101,20051008,C) H04J-1/00(B,I,M,RU,20060101,20050627,A,L) H04J-1/00  
(B,I,M,RU,20060101,20050627,C,L) H04J-13/00(B,I,M,RU,20060101,20040720,A,L) H04J-13/00  
(B,I,M,RU,20060101,20040720,C,L) H04W-36/00(R,N,M,EP,20090101,20090105,C) H04W-36/18  
(R,N,M,EP,20090101,20090105,A) H04W-52/00(R,N,M,EP,20090101,20090105,C) H04W-52/02  
(R,N,M,EP,20090101,20090105,A)  
Current ECLA class: H04B-7/26T10 H04Q-7/38C2 H04Q-7/38H  
Current ECLA ICO class: T04B-7:185S8 T04Q-7:22S3 T04Q-7:32E4 T04Q-7:38C2 T04Q-7:38C8  
T04Q-7:38H4 T04W-36:18 T04W-52:02IRU 2335851 C2 (Update 200934 E)  
Publication Date: 20081010  
Assignee: QUALCOMM INC; US (QUAL-N)  
Language: RU  
Application: RU 2000109590 A 19980916 (Division of application) RU 2004100940 A 20040109  
(Local application)  
Priority: US 1997931535 A 19970916  
Current ECLA class: H04B-7/26T10 H04Q-7/38C2 H04Q-7/38H  
Current ECLA ICO class: T04B-7:185S8 T04Q-7:22S3 T04Q-7:32E4 T04Q-7:38C2 T04Q-7:38C8  
T04Q-7:38H4 T04W-36:18 T04W-52:02

**Taiwan**

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Publication Date: 20010528  
Assignee: QUALCOMM INC; US (QCOM)  
Inventor: JOU Y  
Language: ZH  
Application: TW 1999115444 A 19990211 (Local application)  
Priority: US 1997931535 A 19970916  
Original IPC: H04Q-7/38(A) H04Q-7/38(A)  
Current IPC: H04Q-7/38(A) H04Q-7/38(A)  
Current ECLA class: H04B-7/26T10 H04Q-7/38C2 H04Q-7/38H  
Current ECLA ICO class: T04B-7:185S8 T04Q-7:22S3 T04Q-7:32E4 T04Q-7:38C2 T04Q-7:38C8  
T04Q-7:38H4 T04W-36:18 T04W-52:02

**United States**

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Publication Date: 20011101

**\*\*Supplemental channel selection in wireless communication systems\*\***

Assignee: Rezaiifar, Ramin, San Diego, CA, US (REZA-I) Jou, Yu-Chen, San Diego, CA, US (JOUY-I)

Inventor: Rezaiifar, Ramin, San Diego, CA, US Jou, Yu-Chen, San Diego, CA, US

Agent: QUALCOMM Incorporated, 5775 Morehouse Drive, San Diego, CA, US

Language: EN

Application: US 1997931535 A 19970916 (Division of application) US 2000503869 A 20000214

(Division of application) US 2001870604 A 20010530 (Local application)

Original IPC: H04Q-7/20(A)

Current IPC: H04B-7/185(R,A,N,M,EP,20060101,20051008,A) H04B-7/185

(R,N,M,EP,20060101,20051008,C) H04B-7/26(R,I,M,EP,20060101,20051008,A) H04B-7/26

(R,I,M,EP,20060101,20051008,C) H04W-48/00(R,N,M,EP,20090101,20090105,C) H04W-48/12

(R,N,M,EP,20090101,20090105,A) H04W-52/00(R,N,M,EP,20090101,20090105,C) H04W-52/02

(R,N,M,EP,20090101,20090105,A)

Current ECLA class: H04B-7/26T10 H04Q-7/38C2

Current ECLA ICO class: T04B-7:185S8 T04Q-7:22S3 T04Q-7:32E4 T04Q-7:38C8 T04W-48:12

T04W-52:02

Current US Class (main): 455-455000

Current US Class (secondary): 375-340000 455-443000 455-525000

Original US Class (main): 455455

Original US Class (secondary): 455525 455443 375340

Original Abstract: A channel structure for use in communication systems. Two sets of physical channels, one for the forward link and another for the reverse link, are utilized to facilitate communication of a variety of logical channels. The physical channels comprise data and control channels. The data channels comprise fundamental channels which are used to transmit voice traffic, data traffic, high speed data, and other overhead information, and supplemental channels which are used to transmit high speed data. In response to a power measurement report, a base station can send a control channel frame on a control channel to identify a modified set of base station channels from which a remote station is to receive supplemental channels. The code channels corresponding to the supplemental channels are transmitted to remote station via signaling messages.

Claim: We claim: 1. **\*\*1\*\***. In a wireless communication system in which a plurality of base stations transmit a fundamental channel to a remote station, a method for receiving supplemental channel data, the method comprising: \* transmitting from the remote station a message indicative of the relative strengths of signals received from said plurality of base stations; \* receiving through said fundamental channel a control channel message indicating a subset of said plurality of base stations for receiving the supplemental channel data; and \* demodulating the supplemental channel data from signals transmitted from said subset of said plurality of base stations. |US 20030002464 A 1 (Update 200305 E)

Publication Date: 20030102

**\*\*Channel structure for communication systems\*\***

Assignee: Rezaiifar, Ramin, San Diego, CA, US (REZA-I) Jou, Yu-Cheun, San Diego, CA, US (JOUY-I)

Tiedemann, Edward G. JR., San Diego, CA, US (TIED-I)

Inventor: Rezaiifar, Ramin, San Diego, CA, US Tiedemann, Edward G. JR., San Diego, CA, US Jou, Yu-Ch eun, San Diego, CA, US

Agent: Qualcomm Incorporated, Patents Department, 5775 Morehouse Drive, San Diego, CA, US

Language: EN

Application: US 1997931535 A 19970916 (Division of application) US 2000504242 A 2 0000215

(Local application)

Related Publication: US 6377809 A (Division of patent)

Original IPC: H04J-3/00(A)

Current IPC: H04B-7/185(R,A,N,M,EP,20060101,20051008,A) H04B-7/185  
 (R,N,M,EP,20060101,20051008,C) H04B-7/26(R,I,M,EP,20060101,20051008,A) H04B-7/26  
 (R,I,M,EP,20060101,20051008,C) H04J-1/00(B,I,M,RU,20060101,20050627,A,L) H04J-1/00  
 (B,I,M,RU,20060101,20050627,C,L) H04J-13/00(B,I,M,RU,20060101,20040720,A,L) H04J-13/00  
 (B,I,M,RU,20060101,20040720,C,L) H04W-36/00(R,N,M,EP,20090101,20090105,C) H04W-36/18  
 (R,N,M,EP,20090101,20090105,A) H04W-52/00(R,N,M,EP,20090101,20090105,C) H04W-52/02  
 (R,N,M,EP,20090101,20090105,A)

Current ECLA class: H04B-7/26T10 H04Q-7/38C2 H04Q-7/38H

Current ECLA ICO class: T04B-7:185S8 T04Q-7:22S3 T04Q-7:32E4 T04Q-7:38C2 T04Q-7:38C8  
 T04Q-7:38H4 T04W-36:18 T04W-52:02

Current US Class (main): 370-336000

Original US Class (main): 370336

Original Abstract: A channel structure for use in communication systems. Two sets of physical channels, one for the forward link and another for the reverse link, are utilized to facilitate communication of a variety of logical channels. The physical channels comprise data and control channels. In the exemplary embodiment, the data channels comprise fundamental channels which are used to transmit voice traffic, data traffic, high speed data, and other overhead information and supplemental channels which are used to transmit high speed data. The fundamental channels can be released when the remote stations are idle to more fully utilize the available capacity. The control channels are used to transmit paging and control messages and scheduling information.

Claim: We Claim: 1.\*\*1\*\*. A method for operating a remote station in a plurality of activity modes comprising the steps of: \* operating said remote station in a traffic mode in which dedicated traffic channels are allocated to said remote station when said remote station is actively receiving and transmitting data; \* operating said remote station in a suspended mode wherein said dedicated traffic channels are de-allocated and said remote station monitors a paging channel in an unslotted mode when the time interval, in which said remote station neither transmits nor receives data, exceeds a first threshold interval; and \* operating said remote station in a dormant mode wherein said remote station monitors said paging channel in a slotted mode when the time interval in which said remote station neither transmits nor receives data exceeds a second threshold interval. US 6167270 A (Update 200103 E)

Publication Date: 20001226

\*\*Soft handoff in the transmission of supplemental channel data.\*\*

Assignee: Qualcomm Inc., San Diego, CA, US (QCOM)

Inventor: Rezaiifar, Ramin, San Diego, CA, US Tiedemann, Jr., Edward G., San Diego, CA, US Jou, Yu-Cheun, San Diego, CA, US

Agent: Wadsworth; Philip Ro

Language: EN

Application: US 1997931535 A 19970916 (Division of application) US 2000503871 A 20000214 (Local application)

Original IPC: H04Q-7/20(A)

Current IPC: H04B-7/185(R,A,N,M,EP,20060101,20051008,A) H04B-7/185  
 (R,N,M,EP,20060101,20051008,C) H04B-7/26(R,I,M,EP,20060101,20051008,A) H04B-7/26  
 (R,I,M,EP,20060101,20051008,C) H04J-1/00(B,I,M,RU,20060101,20050627,A,L) H04J-1/00  
 (B,I,M,RU,20060101,20050627,C,L) H04J-13/00(B,I,M,RU,20060101,20040720,A,L) H04J-13/00  
 (B,I,M,RU,20060101,20040720,C,L) H04W-36/00(R,N,M,EP,20090101,20090105,C) H04W-36/18  
 (R,N,M,EP,20090101,20090105,A) H04W-52/00(R,N,M,EP,20090101,20090105,C) H04W-52/02  
 (R,N,M,EP,20090101,20090105,A)

Current ECLA class: H04B-7/26T10 H04Q-7/38C2 H04Q-7/38H

Current ECLA ICO class: T04B-7:185S8 T04Q-7:22S3 T04Q-7:32E4 T04Q-7:38C2 T04Q-7:38C8  
 T04Q-7:38H4 T04W-36:18 T04W-52:02

Current US Class (main): 455-442000

Current US Class (secondary): 370-331000 455-062000 455-455000

Original US Class (main): 455442

Original US Class (secondary): 455455 45562 370331

Original Abstract: A channel structure for use in communication systems. Two sets of physical channels, one for the forward link and another for the reverse link, are utilized to facilitate communication of a variety of logical channels. The physical channels comprise data and control channels. In the exemplary embodiment, the data channels comprise fundamental channels which are used to transmit voice traffic, data traffic, high speed data, and other overhead information and supplemental channels which are used to transmit high speed data. The fundamental channels can be released when the remote stations are idle to more fully utilized the available capacity. The control channels are used to transmit paging and control messages and scheduling information.

Claim: 1. In a wireless communication system in which a remote station is receiving fundamental channel data from a plurality of base stations, a method for performing soft handoff in the transmission of supplemental channel data, comprising the steps of: \* measuring the strength of signals from said plurality of base stations at said mobile station; \* determining the strength of a strongest signal from said plurality of base stations; \* comparing the strength of signals of a remaining set base stations to the strength of said strongest signal; \* determining whether said strengths of signals of a remaining set base stations is within a predetermined energy threshold of the strength of said strongest signal; \* transmitting a message indicative of said determination from said remote station; \* selecting at least one base station from said plurality of base stations to transmit said supplemental channel data to said remote station in accordance with said message; \* transmitting said supplemental channel data to said remote station from said selected at least one base station. US 6377809 B1 (Update 20 0232 E)

Publication Date: 20020423

\*\*Channel structure for communication systems.\*\*

Assignee: Qualcomm Incorporated, San Diego, CA, US (QC OM)

Inventor: Rezaiifar, Ramin, San Diego, CA, US Tiedemann, Jr., Edward G., San Diego, CA, US Jou, Yu-Cheun, San Diego, CA, US

Agent: Wadsworth; Philip Baker; Kent D. Rouse; Thomas R.

Language: EN

Application: US 1997931535 A 19970916 (Local application)

Original IPC: H04Q-7/22(A)

Current IPC: H04B-7/185(R,A,N,M,EP,20060101,20051008,A) H04B-7/185

(R,N,M,EP,20060101,20051008,C) H04B-7/26(R,I,M,EP,20060101,20051008,A) H04B-7/26

(R,I,M,EP,20060101,20051008,C) H04J-1/00(B,I,M,RU,20060101,20050627,A,L) H04J-1/00

(B,I,M,RU,20060101,20050627,C,L) H04J-13/00(B,I,M,RU,20060101,20040720,A,L) H04J-13/00

(B,I,M,RU,20060101,20040720,C,L) H04W-36/00(R,N,M,EP,20090101,20090105,C) H04W-36/18

(R,N,M,EP,20090101,20090105,A) H04W-52/00(R,N,M,EP,20090101,20090105,C) H04W-52/02

(R,N,M,EP,20090101,20090105,A)

Current ECLA class: H04B-7/26T10 H04Q-7/38C2 H04Q-7/38H

Current ECLA ICO class: T04B-7:185S8 T04Q-7:22S3 T04Q-7:32E4 T04Q-7:38C2 T04Q-7:38C8

T04Q-7:38H4 T04W-36:18 T04W-52:02

Current US Class (main): 455-455000

Current US Class (secondary): 370-335000 370-342000 455-067110 455-522000

Original US Class (main): 455455

Original US Class (secondary): 455522 45567.1 370335 370342

Original Abstract: An improved channel structure for use in communication systems is disclosed. The channel structure utilizes two sets of physical channels, one for the forward link and another for the reverse link. The physical channels include data channels and control channels, and the data channels are further divided into fundamental channels and supplemental channels. Fundamental channels are used to transmit voice traffic, data traffic, high speed data, and other overhead information, and supplemental channels are used to transmit high speed data. The fundamental channels may be released

when the remote stations are idle to more fully utilized the available capacity. The control channels are used to transmit paging and control messages and scheduling information. This abstract appears solely to satisfy requirements of 37 CFR 1.72 and is therefore not intended to be used for interpreting the scope of the claims.

Claim: 1. In a telecommunications system in which spread spectrum techniques are used, and in which a channel structure supports a paging channel, where in each paging channel is for transmitting paging messages to a plurality of remote stations, and in which the channel structure supports a supplemental channel, wherein each supplemental channel is for transmitting high speed data traffic, the channel structure comprising: \* a fundamental channel for exchanging voice traffic and data traffic between a remote station of said plurality of remote stations and another base station, wherein said fundamental channel can be used only when said remote station is in a traffic state, and wherein said remote station is in said traffic state only when said remote station is not monitoring the paging channel; and \* a control channel for exchanging signaling information between said remote station and said another station, said control channel comprising control frames, wherein the length of each of said control frames is a fraction of the length of a traffic channel frame, and wherein said control channel can be used only when said remote station is in said traffic state, wherein a reverse link is used to transmit data from a remote station to a base station, and wherein a forward link is used to transmit data from a base station to a remote station, wherein control frames in the reverse link direction comprise one or more reverse link messages comprising: \* erasure indication bits (EIBs) for informing said base station whether frames received on the forward link fundamental and supplemental channels were received as erasures; \* inter-cell power level measurements for informing said base station of the pilot in said remote station's active set that was received with the highest energy-per-chip-to-interference ratio, and for identifying to said base station all pilots in said remote station's active set whose energy-per-chip-to-interference ratio are within a predetermined power level of the pilot received with said highest energy-per-chip-to-interference ratio; \* inter-carrier power level measurements for informing said base station of the varying strength of pilots received by said remote station on different carrier frequencies; and \* a reverse link data request for requesting a supplemental channel for the transmission of high speed data traffic, wherein said reverse link data request contains a queue size associated with the amount of data ready for transmission on the reverse link, and wherein said reverse link data request contains a power headroom associated with the amount of remaining power that said remote station has available for transmission. IUS 6526030 B2 (Update 200323 E)

Publication Date: 20030225

\*\*Channel structure for communication systems\*\*

Assignee: Qualcomm Incorporated, San Diego, CA, US (QCOM)

Inventor: Rezaiifar, Ramin, San Diego, CA, US Tiedemann, Jr., Edward G., San Diego, CA, US Jou, Yu-Cheun, San Diego, CA, US

Agent: Wadsworth, Philip, US Baker, Kent D., US Yafuso, Byron, US

Language: EN

Application: US 1997931535 A 19970916 (Division of application) US 2000504242 A 20000215 (Local application)

Related Publication: US 6377809 A (Division of patent)

Original IPC: H04B-7/216(A)

Current IPC: H04B-7/185(R,A,N,M,EP,20060101,20051008,A) H04B-7/185

(R,N,M,EP,20060101,20051008,C) H04B-7/26(R,I,M,EP,20060101,20051008,A) H04B-7/26

(R,I,M,EP,20060101,20051008,C) H04J-1/00(B,I,M,RU,20060101,20050627,A,L) H04J-1/00

(B,I,M,RU,20060101,20050627,C,L) H04J-13/00(B,I,M,RU,20060101,20040720,A,L) H04J-13/00

(B,I,M,RU,20060101,20040720,C,L) H04W-36/00(R,N,M,EP,20090101,20090105,C) H04W-36/18

(R,N,M,EP,20090101,20090105,A) H04W-52/00(R,N,M,EP,20090101,20090105,C) H04W-52/02

(R,N,M,EP,20090101,20090105,A)

Current ECLA class: H04B-7/26T10 H04Q-7/38C2 H04Q-7/38H

Current ECLA ICO class: T04B-7:185S8 T04Q-7:22S3 T04Q-7:32E4 T04Q-7:38C2 T04Q-7:38C8

T04Q-7:38H4 T04W-36:18 T04W-52:02

Original US Class (main): 370335

Original US Class (secondary): 370342 455522

Original Abstract: A channel structure for use in communication systems. Two sets of physical channels, one for the forward link and another for the reverse link, are utilized to facilitate communication of a variety of logical channels. The physical channels comprise data and control channels. In the exemplary embodiment, the data channels comprise fundamental channels which are used to transmit voice traffic, data traffic, high speed data, and other overhead information and supplemental channels which are used to transmit high speed data. The fundamental channels can be released when the remote stations are idle to more fully utilize the available capacity. The control channels are used to transmit paging and control messages and scheduling information.

Claim: We claim: 1.1. A method for operating a remote station in a plurality of activity modes comprising: \* operating said remote station in a traffic mode in which dedicated traffic channels are allocated to said remote station when said remote station is actively receiving and transmitting data; \* storing, in the remote station, a Radio Link Protocol (RLP) state associated with an active data session of said traffic mode; \* storing a traffic channel configuration associated with said traffic mode; \* storing encryption variables associated with said traffic mode; \* operating said remote station in a suspended mode wherein said dedicated traffic channels are de-allocated and said remote station monitors a paging channel in a non-slotted mode when a traffic mode time interval, in which said remote station operates in the traffic mode and neither transmits nor receives data, exceeds a first threshold interval; \* operating said remote station in a dormant mode wherein said remote station monitors said paging channel in a slotted mode when a suspended mode time interval in which said remote station operates in the suspended mode and neither transmits nor receives data exceeds a second threshold interval; and \* utilizing the stored RLP state, the stored traffic channel configuration, and the stored encryption variables for the transmission and reception of traffic after receiving a channel assignment message on said paging channel. US 7519044 B1 (Update 200926 E)

Publication Date: 20090414

\*\*Channel structure for communication systems\*\*

Assignee: Rezaiifar, Ramin, San Diego, CA, US Residence: US Jou, Yu-Chen, San Diego, CA, US Residence: US Tiedeman, Jr., Edward G., San Diego, CA, US Residence: US QUALCOMM Incorporated, San Diego, CA, US (QCOM)

Inventor: Jou, Yu-Chen, San Diego, CA, US Residence: US Rezaiifar, Ramin, San Diego, CA, US Residence: US Tiedeman, Jr., Edward G., San Diego, CA, US Residence: US

Agent: Rouse, Thomas R. Jenckes, Kenyon S. Vu, Kenneth K.

Language: EN

Application: US 2000503401 A 20000214 (Local application) US 1997931535 A 19970916 (Division of application)

Related Publication: US 6377809 A (Division of patent)

Original IPC: H04J-3/24(B,I,H,US,20060101,20090414,A,F) H04J-3/24 (B,I,M,98,20060101,20090414,C)

Current IPC: H04J-3/24(B,I,H,US,20060101,20090414,A,F) H04J-3/24 (B,I,M,98,20060101,20090414,C)

Current ECLA class: H04B-7/26T10 H04Q-7/38C2 H04Q-7/38H

Current ECLA ICO class: T04B-7:185S8 T04Q-7:22S3 T04Q-7:32E4 T04Q-7:38C2 T04Q-7:38C8 T04Q-7:38H4 T04W-36:18 T04W-52:02

Current US Class (main): 370-349000

Original US Class (main): 370349

Original Abstract: A channel structure for use in communication systems. Two sets of physical channels, one for the forward link and another for the reverse link, are utilized to facilitate communication of a variety of logical channels. The physical channels comprise data and control channels. In the exemplary embodiment, the data channels comprise fundamental channels which are

used to transmit voice traffic, data traffic, high speed data, and other overhead information and supplemental channels which are used to transmit high speed data. The fundamental channels can be released when the remote stations are idle to more fully utilized the available capacity. The control channels are used to transmit paging and control messages and scheduling information.

Claim: We claim: 1.1. A method for transmitting data comprising the steps of: \* transmitting, prior to and independent of said data transmission, a message indicative of the rate of said data and a time interval over which said data will be transmitted at said rate; and \* transmitting said data at said rate during said time interval using a data transmission channel; \* wherein said message comprises: \* an indication of a frame type selected from a plurality of frame types including link schedule, channel active set, and erasure-indicator bit, wherein each of each of these frame types is transmitted at some time; \* an indication of said rate of said data; and \* an indication of said time interval; \* wherein said link schedule indicates the duration of said data transmission; \* wherein said channel active set indicates a set of base stations; and \* wherein said erasure-indicator-bit indicates an erasure of previously received frames.

## WIPO

Publication Number: WO 1999014975 A2 (Update 199921 B)

Publication Date: 19990325

**\*\*CHANNEL STRUCTURE FOR COMMUNICATION SYSTEMS STRUCTURE DE VOIES POUR SYSTEMES DE COMMUNICATION\*\***

Assignee: QUALCOMM INCORPORATED, 6455 Lusk Boulevard, San Diego, CA 92121, US

Residence: US Nationality: US (QCOM)

Inventor: REZAIIFAR, Ramin, 7580 Charmant Drive #2224, San Diego, CA 92121, US TIEDEMANN, Edward, G., Jr., 4350 Bromfield Avenue, San Diego, CA 92122, US JOU, Yu-Cheun, 9979 Riverhead Drive, San Diego, CA 92129, US

Agent: MILLER, Russell, B., Qualcomm Incorporated, 6455 Lusk Boulevard, San Diego, CA 92121, US

Language: EN (48 pages, 9 drawings)

Application: WO 1998US19334 A 19980916 (Local application)

Priority: US 1997931535 A 19970916

Designated States: (National Original) AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH GM HR HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZW (Regional Original) AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG ZW

Original IPC: H04Q-7/38(A)

Current IPC: H04B-7/185(R,A,N,M,EP,20060101,20051008,A) H04B-7/185

(R,N,M,EP,20060101,20051008,C) H04B-7/26(R,I,M,EP,20060101,20051008,A) H04B-7/26

(R,I,M,EP,20060101,20051008,C) H04J-1/00(B,I,M,RU,20060101,20050627,A,L) H04J-1/00

(B,I,M,RU,20060101,20050627,C,L) H04J-13/00(B,I,M,RU,20060101,20040720,A,L) H04J-13/00

(B,I,M,RU,20060101,20040720,C,L) H04W-36/00(R,N,M,EP,20090101,20090105,C) H04W-36/18

(R,N,M,EP,20090101,20090105,A) H04W-52/00(R,N,M,EP,20090101,20090105,C) H04W-52/02

(R,N,M,EP,20090101,20090105,A)

Current ECLA class: H04B-7/26T10 H04Q-7/38C2 H04Q-7/38H

Current ECLA ICO class: T04B-7:185S8 T04Q-7:22S3 T04Q-7:32E4 T04Q-7:38C2 T04Q-7:38C8

T04Q-7:38H4 T04W-20:142 T04W-26:02

Original Abstract: In a channel structure for use in communication systems, two sets of physical channels, one for the forward link (50) and another for the reverse link (52), are utilized to facilitate communication of a variety of logical channels. The physical channels comprise data and control channels. In the exemplary embodiment, the data channels comprise fundamental channels which are used to transmit voice traffic, data traffic, high speed data, and other overhead information and

supplemental channels which are used to transmit high speed data. The fundamental channels can be released when the remote stations are idle to more fully utilize the available capacity. The control channels are used to transmit paging and control messages and scheduling information. L'invention concerne une structure de voies pour systeme de communication dans laquelle il existe deux series de voies physiques, une pour la liaison aller (50) et une autre pour la liaison retour (52). On utilise les deux series en question pour faciliter la communication sur un certain nombre de voies logiques. Les voies physiques comprennent des voies de donnees et des voies de commande. Dans l'exemple considere, les voies de donnees comprennent des voies fondamentales utilisees pour le trafic telephonique, le trafic de donnees et la transmission de donnees a grande vitesse, et autres informations de service, mais aussi des voies supplementaires utilisees pour la transmission de donnees a grande vitesse. Il est possible de liberer les voies fondamentales lorsque les stations eloignees sont au repos, de maniere a tirer parti plus pleinement de la capacite disponible. Les voies de commande sont utilisees pour la radiomessagerie, la transmission des messages de commande et la transmission des donnees relatives a l'ordonnancement.

### South Africa

Publication Number: ZA 199808432 A (Update 199927 E)

Publication Date: 19990526

Assignee: QUALCOMM INC (QCOM)

Inventor: REZAIIFAR R TIEDEMANN E G JOU Y

Language: EN (49 pages)

Application: ZA 19988432 A 19980915 (Local application)

Priority: US 1997931535 A 19970916

Original IPC: H04B(A) H04J(B) H04L(B) H04M(B) H04Q(B)

Current IPC: H04B-7/185(R,A,N,M,EP,20060101,20051008,A) H04B-7/185

(R,N,M,EP,20060101,20051008,C) H04B-7/26(R,I,M,EP,20060101,20051008,A) H04B-7/26

(R,I,M,EP,20060101,20051008,C) H04J-1/00(B,I,M,RU,20060101,20050627,A,L) H04J-1/00

(B,I,M,RU,20060101,20050627,C,L) H04J-13/00(B,I,M,RU,20060101,20040720,A,L) H04J-13/00

(B,I,M,RU,20060101,20040720,C,L) H04W-36/00(R,N,M,EP,20090101,20090105,C) H04W-36/18

(R,N,M,EP,20090101,20090105,A) H04W-52/00(R,N,M,EP,20090101,20090105,C) H04W-52/02

(R,N,M,EP,20090101,20090105,A)

Current ECLA class: H04B-7/26T10 H04Q-7/38C2 H04Q-7/38H

Current ECLA ICO class: T04B-7:185S8 T04Q-7:22S3 T04Q-7:32E4 T04Q-7:38C2 T04Q-7:38C8

T04Q-7:38H4 T04W-36:18 T04W-52:02

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